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ABSTRACT

This study explored the usefulness of case-based teaching, examining college students' perceptions of the Person Focused Learning (PFL) process and investigating what types of knowledge, skills, and dispositions were impacted by the PFL process. The study hypothesized that there would be a difference in students' attitudes toward people with disabilities before and after the PFL treatment was applied in the classroom. Participants were 71 college students and 7 families including persons with disabilities. The PFL interwove families and people with disabilities into the teaching act. Teaching partnerships were implemented according to principles of family centered care. Students teamed to brainstorm developmental or environmental concerns identified by the families or individuals with disabilities. They also interviewed the families and, as a group, identified appropriate adaptations or supports. Students provided oral and written self-reflection regarding their learning outcomes and experiences as team members and completed surveys regarding attitude change. Families provided reactions to team projects. Results revealed a change in students' attitudes toward people with disabilities as a result of participating in the collaborative learning model. Students who had more experience with people with disabilities had more positive attitudes toward such individuals than did students with limited exposure. (Contains 22 references and 3 tables.) (SM)

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Teaching the culture of collaboration: The validity of a case-based, interactive teaching methodology in higher education

Purpose

Educators and human service professionals are increasingly required to work collaboratively, employ critical thinking, and apply problem-solving skills to meet the complex needs of child and families from diverse backgrounds. Teaching practices in higher education have shifted from traditional didactic models to interactive, collaborative and problem-solving approaches. Research in preservice education has explored the use of case based learning to address the schism between theoretical and applied knowledge acquisition in professional service settings (Anderson & Baker, 1999; Cranston-Gingras, Raines, Paul, Epanchin, & Rosselli, 1996; Gerber, English, & Singer, 1999). "Person-focused learning", an adaptation of case based learning, was developed by the authors of this study to examine ways to further modulate the formulation of pre-service students' knowledge and skills to ensure later application in the field. Person-focused learning offers a context to integrate collaborative teaching principles in the classroom setting, by directly including persons with disabilities and family members as partners in the teaching and learning process, increasing the opportunities for exposure to real life problems.

The purpose of the study was to explore the usefulness of case-based teaching methodology with a focus on a person-focused learning process through a missed methods design including a qualitative, participatory action research model and a quantitative treatment design. Limited research exists on case-based instructional methodology or outcomes (McNaughton, Hall, & Maccini, 2001). This multi-campus effort examined the impact of person focused learning across disciplines on student learning outcomes including disposition, knowledge and skills required for effective practice with persons with disabilities. The validity of implementing an interactive teaching approach was demonstrated across several levels of evaluation including observation, interviews, open-ended student evaluations, student team products and a pre and post disability attitude survey. Further, the interdisciplinary, interactive teaching approach was incorporated into the study as a method of triangulation of the research findings across instructors, sites, disciplines, and courses.

Theoretical Framework

Case-based, interactive teaching in higher education encompasses a variety of collaborative and problem based, instructional approaches. The authors based the development of the person-focused model (PFL) implemented in this study on three interactive teaching models. First, problem based learning (PBL) was examined as the overarching model that was developed within medical education to increase application of medical theory and information with specific patient case studies and has since extended to nursing, occupational therapy, and other fields (Chabon & Lee-Wilkerson, 2000). Recently, PBL has been examined as a way to close the gap between research and practice in special education (Cockrell, Hughes-Caplow, & Donaldson, 2000; Gerber, English & Singer, 1999). Secondly, case based learning (CBL), uses a case study process to encourage student responsibility for learning outcomes. Parallel to PBL, CBL presents cases and the application of a problem-solving process that students use to identify relevant issues that require further research. However, rather than resolving the case through a diagnosis, CBL focuses on the inquiry process using issues that are relevant to

the case. As is indicated in PBL, the use of a case encourages group work that inevitably models collaborative communication skills found in the field (Anderson & Baker, 1999; Boyle & Danforth, 2001; Cranston-Gingras, et al, 1996; Sadao, 2001; Shulman, Lotan, & Whitcomb, 1998). Thirdly, family-focused learning (FFL) was developed in the context of interdisciplinary education for health professionals to provide a model of direct involvement of family members in the teaching process (Ratliffe, Stodden, Robinson & Guinan, 2000). Family focused learning follows the case based approach through a series of sessions that begin with identification of issues around a particular family with an individual member with a disability and close with student presentation of research issues related to the particular family that is participating in the teaching and learning process.

Person-focused learning (PFL), incorporates teaching and learning methods included in the previous models, such as critical thinking and problem-solving skills from PBL and CBL and the involvement of individuals with disabilities and their families, characteristic of FFL, but builds on elements of each preceding approach (Robinson & Sadao, 2002). A new facet, unique to the person-focused approach, is the service-learning aspect. In the person-focused approach, students are required to complete a project that responds to needs and concerns identified by the family or individual (Stevens, 2000). The involvement of persons with disabilities/families, faculty, and students in the development and implementation of the teaching experience produces a qualitative shift in teaching methodology and creates a participatory action research model (Guerrero, 1995; Newman, 2000).

In the current study, the authors were concerned with the field testing, potential replication of the teaching methodology and impacts on student learning. The authors sought to systematically explore the value and validity of interactive teaching to promote the development of student competencies in preservice education programs. The overarching research questions addressed in the qualitative portion of the study were descriptive in nature.

1. What are the student perceptions of the Person Focused Learning process?
2. What types of knowledge, skills, and dispositions were impacted through participation in the PFL process?

The hypothesis posed in the quantitative component of the research design measured students' dispositions toward people with disabilities. The hypothesis stated that there is a difference between students' attitudes concerning people with disabilities before and after the PFL treatment was applied in a classroom instructional format. The researchers employed a mixed method design in order to explore potential benefits of the PFL process while measuring change in student attitude that may result from incorporating an experiential and collaborative learning activity within the classroom setting.

Methods

Site and Sample

The study was completed in the context of three interdisciplinary courses (special education, speech and language pathology, health) at three different university sites located in the Western US, with 71 students and 7 families including persons with disabilities. While course content differed across the three sites, teaching methods were similar as discussed in the following section.

Person focused learning process

PFL is based on partnership with families and persons with disabilities interwoven in the teaching act. Teaching partnerships were implemented according to principles of "Family Centered Care," in which family concerns drive professional interventions (Harry, Rueda & Kalyanpur, 1999; Matteoli, Verhey, & Warda, 1994; Gartner, Lipsky, & Turnbull, 1991). Key steps in the teaching partnership included: (a) determination of family priorities; (b) adaptations to meet family and individual needs; (c) family input in project development; and (d) evaluation of completed projects by family members and persons with disabilities. Students engaged in a common process across all sites that included identification of needs by persons with disabilities and/or family members. Eight steps were completed in the person-focused learning teaching process. First, faculty developed curriculum information about individuals in partnership with identified families and persons with disabilities. Second, students reviewed available information about the family and/or individual determine an initial developmental or environmental concerns identified by the family and/or individual. Third, student groups conducted brainstorming regarding potential family and individual concerns. Fourth, students prepared interviews based on guidelines provided by faculty. Fifth, students conducted interviews with individuals and/or family members. Sixth, the working group met to identify adaptation or support project based on results of prior information and interviews with individual and family members. Seventh, student groups presented completed projects to individuals and family members. Finally, student evaluations of the process and projects were completed along with individual family interviews conducted by the researchers.

Evaluation Methods

The research design based on a participatory action research model included formative and summative documentation. Students provided self-reflection in oral and written form regarding their learning outcomes, their experiences as a team member, and family reactions to team projects presented. Students were queried informally during the duration of the courses on their participation as part of a group process in research and designing an adaptive material for individual families and consumers. Changes in attitudes regarding the process were surveyed using a pre and post questionnaire format. Throughout the participatory action process and as a culmination of the course, the instructors provided continuous feedback and guidance to students regarding the team building process, information gathering, project development, and the product evaluation.

Analysis

The analyses used a mixed method design (Tashakkori & Teddlie, 1998) combining qualitative methodology investigating the effectiveness of the person focused learning model with a quantitative component to compare student attitudes from the outset and the conclusion of the course. Qualitative student feedback gathered, was analyzed using a constant/comparative method (Bogdan & Biklin, 1998) of exploring the data for themes and patterns. The co-researchers analyzed the results independently to provide a method of triangulation of the data reviewed (Creswell, 1998). Themes were generated from the analysis of the student input and product analysis. Pre and post disability attitude data were statistically compared, using paired t-tests, to determine changes that occurred during the course of the semester as a result of course content and teaching methodology. A one-way analysis of variance was used to compare categorical

variables of gender, age, disability, ethnicity, and amount of previous contact with people with disabilities.

Data sources

As described in the preceding section, evaluation of person-focused learning to determine the validity of this approach to impact student learning was conducted through qualitative and quantitative methods. The following data sources were employed.

Student self-reflection. Students were provided informal and formal opportunities throughout the course to provide oral and written feedback regarding the interactive teaching and learning process. Oral discussions were led by the instructors throughout the courses, as formative sources of data to determine students' perceptions of their participation in the learning process. Summative written evaluations were completed by each student that focused on individual students' self-assessment of learning outcomes related to team work, attitudinal shifts regarding persons with disabilities, knowledge of family and cultural issues, and quality of their completed team projects. Completed self-reflection papers were gathered and analyzed by the authors.

Student course feedback. Oral discussions were led by the instructor as formative evaluations of the teaching process to determine student's perceptions of the effectiveness of interactive teaching practices. Written feedback was requested and gathered from students as a formative evaluation data source to determine components of the course that students considered effective and not effective. Students also provided written suggestions for course improvement.

Family feedback. The instructors obtained feedback from family members through interviews. Further, individual families provided feedback to students regarding the quality of the completed project, designed to benefit individuals with disabilities with an adaptive tool or approach.

Modified Indicators of Disability Scale (MIDS). The MIDS (Makas, 1997) was developed and validated in a series of studies in diverse cultural and socioeconomic settings. The purpose of the instrument was to determine individual reactions to statements that reflect stereotyped attitudes about persons with disabilities. The MIDS was administered at the beginning and again at the end of each course in order to compare changes in the degree of agreement/disagreement with a series of stereotyped attitudes about persons with disabilities. The individual ratings for each of the 49 items were provided in a 7 point Likert-scale format from 1 indicating strongly disagree; 2=disagree; 3=somewhat disagree; 4=don't know, no opinion; 5=somewhat agree; 6=agree; and 7=strongly agree.

Results

Results of the study are discussed in relation to the validation and implications of case-based, interactive learning in the context of preservice education to prepare students to interact successfully in collaborative practice. Qualitative analysis of students' written self-reflections identified consistently seven recurring themes across the qualitative data collected in each of the three courses. These themes included: (a) attitudinal change; (b) authentic engagement; (c) critical thinking; (d) sensitivity to families and individuals; (e) collaborative teamwork; (f) preparation for inclusion; and (g) self–efficacy/skills to adapt materials. Student feedback regarding their perceptions of course effectiveness was highly positive regarding learning in collaborative teams and suggestions for improvement included more time to complete team projects. The results demonstrate that

person-focused learning provides a valid method to support integration of student learning and applied problem-solving in preservice education.

Quantitative analysis using SPSS of the pre and post survey results on 60 of the 71 student participants revealed significant differences on 15 out of 49 items, .05 probability level (Table 1). A paired sample *t* test was calculated to compare the mean pretest MIDS rating to the mean posttest MIDS rating. Students' attitudes changed from less positive to more positive. If an item was designed where a more negative response indicated a more positive attitude toward people with disabilities, the items were reversed in the quantitative analysis to account for the negative outcome being the expected response.

Additionally, a one-way analysis of variance between changes in students' MIDS ratings and the degree of contact with persons with disabilities was significant at the .05 level (Table 2). Further, Tukey's post hoc analysis procedure determined that increased contact with persons with disabilities influenced students' positive responses (Table 3). Specifically, one-way ANOVA was computed to compare positive changes in students' MIDS ratings from the beginning and end of the semester (dependent variable) to categorical variables including working status, age, gender, disability status, ethnicity, and degree of contact with people with disabilities (independent variables). No significant difference was found in the comparisons of students' mean changes in MIDS scores and categorical variables with the exception of the degree of contact. Those students with a great deal of contact showed significant changes in their MIDS ratings when compared with each of the other groups, including those with very little contact, some contact, and quite a bit of contact. Table 2 shows the significant differences found in one-way ANOVA comparisons. A significant difference was found between students' changes in MIDS ratings and degree of contact with people with disabilities ($F(3,55)=7.766$, $p<.000$). Tukey's HSD was used to determine the strength of the relationship found between levels of contact with persons with disabilities. The analysis revealed that students with a great deal of contact with persons with disabilities showed more positive attitudes than students with lesser degrees of contact.

Table 1. Paired samples *t* test

Significant Items from MIDS Survey				
Item number and name	Mean	Std. Deviation	T	Sig. (2-tailed)
1. The majority of adolescents with physical disabilities should attend special schools which are specifically designed to meet their needs.	.62	2.08	2.301	.025
2. Certain jobs should be set aside for blind persons so that they don't have to compete directly with persons who do not have disabilities.	.85	1.71	3.86	.000
6. Children who have disabilities should not have to compete academically with children who do not have disabilities.	.83	1.95	3.310	.002
7. With the current trend in industrial technology, there will probably be fewer jobs in the future that people with physical disabilities can do.	.500	1.712	2.26	.027
9. If you are walking with a blind person, it is easier for her/him to take your arm than for you to take his/her arm.	-1.05	2.53	-3.218	.002
18. People with physical disabilities should be expected to	-.67	1.63	-3.162	.002

meet the same vocational standards as other people.				
19. People with severe disabilities are no harder to get along with than those with minor disabilities.	-.48	1.82	-2.059	.044
21. One should avoid asking people who have disabilities questions about their disabilities.	.68	1.41	3.759	.000
27. Educational programs for students who have physical disabilities are very expensive in relation to what children with disabilities gain from them.	.68	1.43	3.696	.000
28. Most blind people are capable of maintaining a clean, attractive hon.e.	.38	1.19	-2.068	.043
31. People who have disabilities are generally no more anxious or tense than people who do not have disabilities.	-.48	1.89	-1.980	.052
33. Teachers should not expect students who have epilepsy to participate fully in physical education activities.	.43	1.60	2.100	.040
40. For a person with a severe disability, the kindness of others is more important than any educational program.	.57	1.95	2.249	.028
44. A high school student with a physical disability will probably feel inadequate in a regular classroom.	.47	1.61	2.245	.029
48. It would be much easier for people who have disabilities if they lived in residential units (e.g., apartment buildings) with others who also have disabilities.	.48	1.37	2,730	.008

Table 2. One-way ANOVA comparing differences in MIDS ratings by contact

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.751	3	.584	7.766	.000
Within Groups	4.133	55	7.515E-02		
Total	5.884	58			

Table 3. Tukey HSD for contact with people with disabilities

(I)Contact	(J)Contact	Mean Difference (I-J)	Std. Error	Sig.	95% confidence interval	
					Lower Bound	Upper Bound
Very little	Some contact	-2.0268E-02	9.043E-02	.996	-.2599	.2193
	Quit a bit	.1562	9.894E-02	.521	-.1261	.3981
	A great deal	-.4202*	.1175	.002	-.7521	-.1293
Some	Very little	2.027E-02	9.043E-02	.996	-.2193	.2599
	Quit a bit	.1562	9.553E-02	.368	-9.6848E-02	.4093
	A great deal	-.4204*	.1147	.003	-.7242	-.1166
Quite a bit	Very little	-.1360	9.894E-02	.521	-.3981	.1261
	Quit a bit	-.1562	9.553E-02	.368	-.4093	9.685E-02
	A great deal	-.5767*	.1215	.000	-.8986	-.2548
A great deal	Very little	.4407*	.1175	.002	.1293	.7521
	Quite a bit	.4204*	.1147	.003	.1166	.7242
	A great deal	.5767*	.1215	.000	.2548	.8986

*The mean difference is significant at the .05 level.

Educational Importance of the Study

To date, results indicate that involvement of persons with disabilities in the teaching process provides authentic learning that cannot be replicated with more

traditional didactic methods. Additionally, including people with disabilities in the research/teaching process assures that the validity of the study is maintained through full involvement of the subject/participants (Guerrero, 1995; Robinson & Sadao, 2002; Whyte, 1991). Further, reciprocity in the learning setting is achieved where students learn the needs of families and the value of shared knowledge when designing materials and technologies to assist them in the learning environment. The "realness" of the learning setting allowed researchers to identify qualitative learning outcomes for students and positive attitudinal shifts when students were directly involved with persons with disabilities and family members in the context of an action research design. The repetition and practice of collaborative problem solving among students of different disciplines within a community of learners fosters the broadening of student perspectives and professionalism that embodies a culture of collaboration (Sadao, 2001).

The quantitative analysis of the study revealed a change in student attitudes toward people with disabilities as a result of their participation in the collaborative learning model employed in the instructional approach. Furthermore, students with a great amount of experience with individuals with disabilities have a more positive attitude toward those individuals than students with limited exposure. Further research is needed to a) determine measures for long-range qualitative and quantitative outcomes of PFL; b) compare PFL teaching to other traditional teaching methodologies; and c) specify guidelines for replication of PFL teaching.

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